

1       **CLAIMS OF THE INVENTION**

2       1. A method of preventing intervertebral disc herniation and related disorders in a human  
3       or an animal spine comprising, first, a discovery that torques, forces, stresses, strains,  
4       sprains imposed on said spine, the pelvis and the spinal and pelvic components and the  
5       deviations in the musculoskeletal structure and biomechanics of said human or animal is  
6       a cause of said herniation of an intervertebral disc or a plurality of intervertebral discs  
7       and, second, a data means for estimating the risks, incidences and propensity towards said  
8       disc herniation in a human population or an animal population comprises:

9              an application of said discovery for the prevention of said disc herniation;

10             an application of said discovery for the treatment of of said disc herniation;

11             an illustration of said data;

12             an application of said data for the prevention of said disc herniation;

13             an application of said data for the treatment of of said disc herniation;

14             an identification of the soft tissues producing or involving with said disc  
15       herniation;

16             a treatment of the soft tissues producing or involving with said disc herniation;

17             a measurement of a length of a muscle originating from said spine;

18             a measurement of the lengths of a plurality of muscles originating from said spine;  
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- 1 a measurement of a length of a muscle inserting on said spine;
- 2 a measurement of the lengths of a plurality of muscles inserting on said spine;
- 3 a measurement of a length of a muscle originating from the pelvis;
- 4 a measurement of a length of a muscle inserting on the pelvis;
- 5 a measurement of the lengths of a plurality of muscles originating from the pelvis;
- 6 a measurement of the lengths of a plurality of muscles inserting on the pelvis;
- 7 a measurement of a length of a muscle originating from the leg;
- 8 a measurement of a length of a muscle inserting on the leg;
- 9 a measurement of the lengths of a plurality of muscles originating from the leg;
- 10 a measurement of the lengths of a plurality of muscles inserting on the leg;
- 11 a measurement of an angle formed by the long axis of a muscle and the long axis of said spine;
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- 13
- 14 a measurement of a plurality of angles formed by the long axes of a plurality of muscles and the long axis of said spine;
- 15
- 16 a measurement of a torque exerted by a muscle on said spine;
- 17 a measurement measuring the torques exerted by a plurality of muscles on said

- 1       spine;
- 2           a measurement of a force exerted by a muscle on said spine; and
- 3           a measurement of forces exerted by a plurality of muscles on said spine.
- 4       2. The method according to claim 1 wherein said deviations in the musculoskeletal  
5       structure and biomechanics according to claim 1 include the shortening and contracture of  
6       a specific muscle relating to said spine.
- 7       3. The method according to claim 1 wherein said deviations in the musculoskeletal  
8       structure and biomechanics according to claim 1 include the shortening and contracture of  
9       a plurality of specific muscles relating to said spine.
- 10      4. The plurality of muscles according to claim 3 include the shortening, spasm,  
11       contracture or a combination thereof of the hip flexors.
- 12      5. The plurality of muscles according to claim 3 include the shortening, spasm,  
13       contracture or a combination thereof of the hip extensors.
- 14      6. The method according to claim 1 wherein said illustration of said data means for  
15       estimating the risks, incidences and propensity towards said disc herniation comprises the  
16       characteristics and activities of individuals who had said disc herniation or herniations.
- 17      7. The data means according to claim 6 comprises a plurality of ratio's of male:female;  
18       age ranges, averages, means, medians and standard deviations in males and females; types  
19       of bodies; measurements of lengths of a plurality of muscles originating from said spine;  
20       measurements of the lengths of a plurality of muscles inserting on said spine;  
21       measurements of lengths of a plurality of muscles originating from said pelvis;

1        measurements of lengths of a plurality of muscles inserting on said pelvis; measurements  
2        of lengths of a plurality of muscles originating from the legs; measurements of lengths of  
3        a plurality of muscles inserting on the legs; measurements of a plurality of angles formed  
4        by the long axes of a plurality of muscles and the long axis of said spine; measurements  
5        of a pluraltiy of torques and forces exerted by a plurality of muscles on said spine; and  
6        types of physical activities and works.

7        8. The method according to claim 1 wherein said identification of the soft tissues  
8        producing or involving with said disc herniation comprises the identification of specific  
9        muscles in the muscle groups of intervertebral muscles, abdominal and back muscles, hip  
10      flexors, hip extensors, ankle dorsiflexors and ankle dorsieextensors, and muscles inserting  
11      on and originating from said spine and pelvis adaptable to produce or involve with said  
12      disc herniation.

13      9.The method according to claim 1 wherein said identification of the soft tissues  
14      producing or involving with said disc herniation comprises the identification of specific  
15      short and long spinal ligaments that cause or involve with said disc herniation.

16      10. The method according to claim 1 wherein said a treatment of the soft tissues  
17      producing or involving with said disc herniation comprises a formula means for  
18      rehabilitating the muscles produce or involve with said disc herniation.

19      11. The method according to claim 1 wherein said a treatment of the soft tissues  
20      producing or involving with said disc herniation comprises a formula means for  
21      rehabilitating the ligaments produce or involve with said disc herniation.

22      12. The formula means for rehabilitating according to claim 10 includes a plurality of  
23      formulas for the elongation or stretching of a specific muscle.

- 1        13. The formula means for rehabilitating according to claim 10 includes a plurality of  
2        formulas for the elongation or stretching of a plurality of specific muscles.
  
- 3        14. The formula means for rehabilitating according to claim 13 includes a plurality of  
4        formulas for the elongation or stretching of the intervertebral muscles.
  
- 5        15. The formula means for rehabilitating according to claim 13 includes a plurality of  
6        formulas for the elongation or stretching of the hip flexors.
  
- 7        16. The formula means for rehabilitating according to claim 10 includes a plurality of  
8        formulas for the strengthening of a specific muscle.
  
- 9        17. The formula means for rehabilitating according to claim 10 includes a plurality of  
10      formulas for the strengthening of a plurality of specific muscles.
  
- 11      18. The formula means for rehabilitating according to claim 10 includes a plurality of  
12      formulas for the relaxation of a plurality of muscles.
  
- 13      19. A nonsurgical treatment of intervertebral disc herniation and related disorders in a  
14      human or an animal spine comprising, first, a discovery that torques, forces, stresses,  
15      strains, sprains imposed on said spine, the pelvis and the spinal and pelvic components  
16      and the deviations in the musculoskeletal structure and biomechanics of said human or  
17      animal is a cause of said herniation of an intervertebral disc or a plurality of intervertebral  
18      discs and, second, a data means for estimating the risks, incidences and propensity  
19      towards said disc herniation in a human population or an animal population comprises:  
  
20            an illustration of said data;  
  
21            an application of said discovery for the treatment of of said disc herniation;

- 1       an application of said data for the treatment of of said disc herniation;
- 2       an identification of the soft tissues producing or involving with said disc  
3       herniation;
- 4       a treatment of the soft tissues producing or involving with said disc herniation;
- 5       a measurement of a length of a muscle originating from said spine;
- 6       a measurement of the lengths of a plurality of muscles originating from said spine;
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- 8       a measurement of a length of a muscle inserting on said spine;
- 9       a measurement of the lengths of a plurality of muscles inserting on said spine;
- 10      a measurement of a length of a muscle originating from the pelvis;
- 11      a measurement of a length of a muscle inserting on the pelvis;
- 12      a measurement of the lengths of a plurality of muscles originating from the pelvis;
- 13      a measurement of the lengths of a plurality of muscles inserting on the pelvis;
- 14      a measurement of a length of a muscle originating from the leg;
- 15      a measurement of a length of a muscle inserting on the leg;
- 16      a measurement of the lengths of a plurality of muscles originating from the leg;

- 1        a measurement of the lengths of a plurality of muscles inserting on the leg;
  - 2        a measurement of an angle formed by the long axis of a muscle and the long axis  
3              of said spine;
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  - 5        a measurement of a plurality of angles formed by the long axes of a plurality of  
6              muscles and the long axis of said spine;
  - 7        a measurement of a torque exerted by a muscle on said spine;
  - 8        a measurement measuring the torques exerted by a plurality of muscles on said  
9              spine;
  - 10      a measurement of a force exerted by a muscle on said spine; and
  - 11      a measurement of forces exerted by a plurality of muscles on said spine.
- 12     20. A preventive medicine of disc herniation comprising a means for preventing and  
13        nonsurgically treating intervertebral disc herniation in humans and animals comprising a  
14        discovery that torques, forces, stresses, strains, sprains imposed on said spine, the pelvis,  
15        the spinal and pelvic components and the deviations in the musculoskeletal structure and  
16        biomechanics of said humans or animals and a data relating to the intervertebral disc  
17        herniation in individuals in a human population or an animal population wherein said data  
18        comprising the characteristics of individuals who had disc herniation or herniations  
19        adaptable, first, to elucidate said characteristics of individuals, second, serve as a  
20        predictor and pointer of the risks and incidences of said disc herniation and as an  
21        identifier of individuals who are prone or susceptible to said herniation, and, third, to  
22        guide the nonsurgical treatment and management of said disc herniation in said  
23        individuals comprises:

- 1       an application of said discovery for the prevention of said disc herniation;
- 2       an application of said discovery to identify the individuals who are at risk for said disc herniation;
- 3       an application of said discovery to identify the individuals who are prone or susceptible to said disc herniation;
- 4       an application of said discovery for the treatment and management of said disc herniation;
- 5       an application of said data for the prevention of said disc herniation;
- 6       an application of said data to identify the individuals who are at risk for said disc herniation;
- 7       an application of said data to identify the individuals who are prone or susceptible to said disc herniation;
- 8       an application of said data for the treatment and management of said disc herniation;
- 9       a formula means for rehabilitating the muscles produce or involve with said disc herniation; and
- 10      a formula means for rehabilitating the ligaments produce or involve with said disc herniation.
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